
UNIT 17 CASH MANAGEMENT

Structure

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- 17.5 Optimum Cash Balance
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17.0 OBJECTIVES

After studying this unit, you should be able to:

- explain the motives for holding cash;
- prepare cash budget;
- discuss optimum cash balance; and
- explain electronic banking.

17.1 INTRODUCTION

Cash management is a very important area and is very critical for survival of an organisation. It entails management of cash for day today activities as well as maintaining cash for meeting the desired medium/long term objectives of the organisation. Objectives of cash management are to reduce the liquidity risks, make cash available for day today activities, minimise the cash, invest surplus cash in the best possible manner and maintain optimum cash balance in the system at all times. For this various tools and techniques are used which include cash forecasting, managing cash collection disbursement, optimum cash balance etc. In this unit you will learn all this in detail.

17.2 MOTIVES FOR HOLDING CASH

Before we discuss motives for holding cash, let us explain objectives of cash management. Cash management objectives and strategies are:

- i) to ensure through efficient cash management structure that the funds are available at the right time at the lowest cost possible.
- ii) to ensure that liquid resources must be managed in such a manner that idle cash balances are minimised and where possible reduce fund borrowings and associated costs.

- iii) to enhance cash generation, reduce funding requirements through effective credit control and timely settlement of payable and receivable balances.

In short, basic objectives of cash management in any organisation is to balance at all times two mutually contradictory and conflicting tasks of meeting cash requirements and minimising funds deployed.

Motives for Holding Cash

- 1) An organisation enters into various transaction during the course of its operations which results into cash inflows like cash sales, realisation from debtors, dividends etc. and cash outflows like payment of salaries, vendors, contractors, capital expenditure etc. However the inflows and outflows are not synchronous and frequently there are situations where either the outflows exceeds inflows or *vice versa*. To meet payment obligations in situations where outflows exceed inflows, an organisation must have sufficient cash balance.
- 2) There are conflicting reasons for holding cash as excess or idle cash held in the system does not provide return while less cash held affects liquidity which is critical for the survival of the organisation.
- 3) Cash is generally held for managing day to day liquidity in the system especially in situations where cash outflows exceeds inflows. This can be termed as **transaction motive** of holding cash.
- 4) Cash may be held in reserve for meeting unexpected cash needs arising out of unforeseen circumstances like floods, riots, lockouts etc. This is known as **precautionary motive** of holding cash.
- 5) At times organisations may hold disproportionate amount of cash for taking advantage of the circumstances like for availing attracting cash discounts, take over of new companies, buying securities for speculative purposes etc. This is known as **speculative motive** of holding cash. As the name suggests, it is held for speculative purposes only and not in ordinary course of business.
- 6) Yet another motive for holding cash balances is for meeting commitments like bank deposits and fixed deposits etc. This is compensating objective of holding cash.

17.3 CASH FORECASTING AND BUDGETING

You know that cash flows are not synchronous and there are mismatches between outflows and inflows. Therefore to assess the requirement of cash properly, forecasting the cash requirements in advance is desirable so that adequate steps can be taken before the actual situation arises.

Cash budget is an important tool in cash management to plan and control the use of cash. It is statement which reflects the estimated cash outflows and inflows over the planning horizon.

Various purposes of cash budget are as under:

- It helps in projecting the future mismatches and reflects the excess and deficit cash in the system.
- It enables the firm to take advantage of the excess money by availing cash discounts, investment in marketable securities etc.
- It identifies periods where there may be shortage of cash, so that the funding can be tied up in advance and hence at competitive rates.

Cash budgets, therefore, helps in planning the cash flows in advance and taking adequate steps for optimum management of cash.

Preparation of Cash Budget

Steps for preparation of cash budget can be summarized as under:

- a) First step is the selection of time horizon for preparing the cash budget. It differs from firm to firm depending upon the type of operations, accuracy of data availability, stability of cash flows, etc. The time horizon should be neither too long nor too short. As if the horizon is too long, it is very difficult to assess the accuracy of the data to make the forecasts, the data itself may not be available, and if the time horizon is too short, the cash budget would not be able to forecast the shortages and deficits in the cash balances as desired. The seasonality of the business should also be considered and the time horizon of the cash budget should cover the season cycle of the business. Generally a cash budget is for a year divided into quarterly or monthly intervals. If the situation demands, cash budgets are also drawn for shorter intervals like for a week and if the cash cycle is very volatile even for a day.
- b) Second step is the estimation of cash items, both inflows and outflows over the chosen time horizon. For estimating cash flows, cash flows are broadly divided into two categories, Operating cash flows and Financial cash flows.

Operating cash flows: examples of operating cash inflows are cash sales, recovery from debtors etc. while that of outflows are salaries factory expenses, administrative expenses etc. Cash flows are estimated based on valid assumptions and the underlying operating factors, like recovery of debtors depend upon the credit terms with the debtors, system of offering cash discounts, collection policies etc. Similarly in case of accounts payable, cash outflows will be dependent on the credit period available from creditors, other purchasing terms and conditions etc.

Financial cash flows : major financial cash inflows are loans taken, borrowings, equity infusion, interest and dividend received etc. and outflows are statutory payments, repayment of loans, interest, payment of dividend etc. For estimating these cash flows also certain assumptions and underlying factors to be considered.

- c) Last step is the actual construction of the cash budget, wherein for the selected time horizon, both inflows and outflows as identified above are plotted and excess and shortage of cash at the end of each interval is identified. Accordingly plans can be prepared for investment of surplus cash in case of excess or financing requirements in case of shortages.

Sample cash budget can be presented as under:

Cash Budget (Amount in Rs. '000)

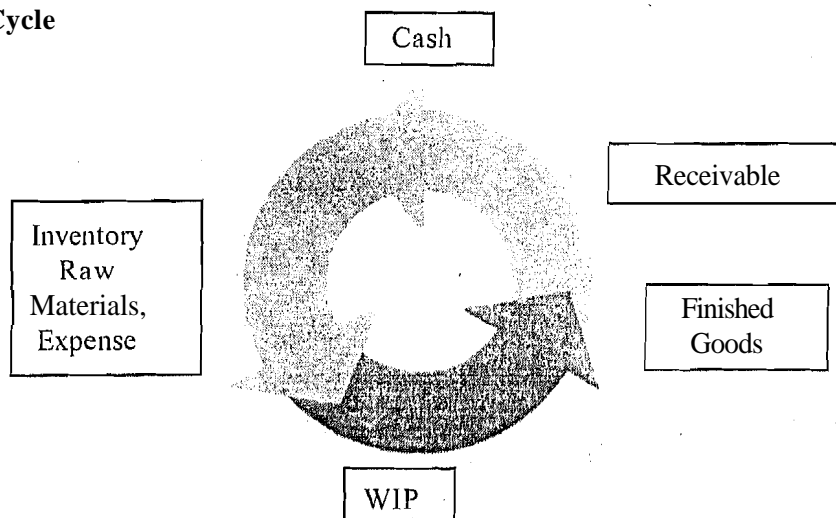
Period	April	May	June	July	August	September
(A) Cash inflows						
1.	Cash Sales					
2.	Collections					
3.	Others					
Total						
(B) Cash outflows						
1.	Salary					
2.	Expenses					
3.	Capital exp					
4.	Others					
Total						
(C) Net gain or Loss						
1.	By end of month					
2.	Cumulative gain or loss					

17.4 MANAGING CASH COLLECTION AND DISBURSEMENT

The cash budget explained as we have seen above throws light on the cash position of the firm for a time horizon. Let us now try to understand the broad strategies of cash management.

Broad cash management strategies are linked to the cash cycle of a firm. Cash cycle of a typical manufacturing can be depicted as under

Cash Cycle



Cash cycle reflects the total time elapsed in the process by which the cash is used for making payments to suppliers for raw material and expenses which results in raw materials inventory. The inventory is then converted into work-in-progress during the manufacturing process and is finally transformed into finished goods inventory. The finished goods are then sold to customers to whom credit is offered. Cash is again received on realization from customers.

This is a continuous process and the cycle repeats itself again and again. Cash turnover means the number of times cash is used each year. Cash turnover is calculated as

Cash Turnover = $360 / \text{Cash cycle in number of days}$

Illustration : In a firm, average credit available from vendors for raw material is 60 days, it takes average 80 days between processing of inventory to sale of finished goods and it takes on an average 70 days for collection of receivables. What is the firm's cash cycle ?

Solution : You know cash cycle can be calculated by finding the time elapsed between paying accounts payable and collection of accounts receivable.

Cash cycle = $80 \text{ days} + 70 \text{ days} - 60 \text{ days} = 90 \text{ days}$

Cash turnover = $360 / 90 = 4$

As we have seen above, there are conflicting tasks of meeting cash requirements and minimising cash balances. All cash management strategies are essentially directed towards minimising the cash balances without affecting adequate liquidity. This can be achieved by reducing the cash cycle to the extent possible or maximising the cash turnover.

The basic strategies to the needful are as follows :

- Speedy collection of accounts receivable
- Efficient production and management of inventory
- Stretching accounts payable

d) Mix of all the above

We shall now examine speedy collection of collection receivable and stretching accounts payable in detail.

Speedy Collection of **Accounts** Receivable

An effective strategy for efficient cash management is to collect the accounts receivable in shortest possible time. Factors affecting the collection of accounts receivable are credit period, collection policies and methodology of collections and credit ratings of customers.

Shorter the credit period offered to customers, faster is the collection time. However in today's competitive scenario, credit period is generally dictated by market exigencies.

Collection policies should be drafted towards speedy collection of account receivable. Policy of offering cash discounts should be explored and based on cost benefit analysis, they should be offered to customers. In today's scenario there are faster methods for collection of receivables being offered by banks. Details of this are covered in the section electronic banking.

Credit rating of customers ensures that credit is offered to worthy customers only so that there are no bad debts and collection process is smooth.

If the firm in the illustration above, reduces the average collection of receivables from 70 days to say 40 days, the cash cycles reduce from 90 days to 60 days. Suppose the operating cash requirement was Rs. 90 lakhs when the cash cycle was 90 days. After the reduction in cash cycle to 60 days, the operating cash requirement will fall from Rs. 90 lakhs to Rs. 60 lakhs. This will lead to reduction in cash balance of Rs. 30 lakhs. Let us assume that cost of funds is 10% accordingly this will lead to cost savings of Rs. 3 lakhs (Rs. 30 lakhs x 10%).

There are techniques and processes for faster collection of account receivables. Let us discuss them in some detail.

For speedy cash collections, there are two basic approaches to do this. First the customers should be encouraged to pay as quickly as possible and secondly the payment from customers should be converted to cash.

Prompt payment by customers : To ensure prompt payment from customers, billing should be done promptly and accurately. Method of receiving payment should be clearly stated in the invoice along with the credit terms. Use of self addressed envelopes are also useful in encouraging prompt payments. Also, possibility of offering cash discounts should be explored after due cash benefit analysis. Availability of cash discount implies considerable savings to the customers.

Faster conversion of payments into cash : The time interval between conversion of payment into cash can be divided into three steps.

- a) **Transit time or postal float:** This is the time taken for cheque to reach the firm by post or courier. The lag in this process is on account of postal system
- b) **Cheque deposit float:** This is the time taken in depositing the cheque in the bank after it has been received. This is controllable and any delay in this can only be termed as laziness
- c) **Collection float:** This is the time taken by the banks in collecting payment from customers bank. This is predetermined and should be negotiated with the bank. The sum of these floats are collectively known as deposit float. Efforts should be made to reduce the deposit float, as this will directly result into speedy collection of receivables.

One of the techniques for reducing deposit float is decentralised collection, where the

Concentration banking : In this method of decentralized collection of accounts receivable, a large firm which has a very wide geographical spread of customers can select certain decentralized locations for making collections. Instead of all the collections getting deposited into head office, collection take place in these locations depending upon the geographical location. This helps in cutting down the collection time as transit time goes down.

Cash management services : Many banks are now offering cash management services which provides for collection of cheques from dealers/ customers at their local places which are pooled at a single location. This reduces the postal float and cheques deposit float as the banks are in a better position to manage these transactions. Also collection float can be negotiated with the banks. So overall the deposit float comes down. However the banks also levy charges for providing these services. So cost benefit analysis should be done and accordingly if the cost savings are higher than the charges levied, a firm should adopt these cash management services otherwise not. This facility has been made possible due to continuous up gradation in the banking infrastructure with the help of information technology across the country.

Stretching Accounts Payable

The operating cash cycle can also be reduced by slow disbursements of accounts payable. They represent unsecured source of funds which does not require any interest payments. There are many techniques to stretch the accounts payable namely:

- a) Not making payments before time
- b) Centralised processing of all accounts payable
- c) Making use of payment floats
- d) Deferments etc.

Payments should be made on time and should not be processed before time. However if vendor asks for payment before time, cash discounting can be explored depending upon the cost benefit analysis.

Payments if possible should be processed centrally and all the payments may be made centrally from head office. This will increase the time lag in processing of payments and therefore will reduce cash cycle. Also payments can be made from distant banks so that the time taken in clearing of cheques from banks can be delayed. Generally all the cheques issued are not presented for clearing at the same time and there is a time lag before which they are presented in the bank for clearing. One can make use of this phenomenon by keeping funds only to the extent of the amount of cheques which will be presented. The float can be estimated based on scientific cheques cashing analysis and past trends.

To the extent possible, the expenses should be accrued as current liability which represents liability which is pending for payment. For example, liability for salary is accrued to month end although the services are rendered by the employees in advance. Similarly efforts should be made to defer the actual cash flows for a liability to the extent possible.

Check Your Progress A

- 1) List the motives for holding cash.
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17.5 OPTIMUM CASH BALANCE

Maintenance of optimum cash balance requires balancing of two conflicting tasks namely:, maintaining liquidity in the system and maintaining minimum cash balances. In practice there is no single optimum cash balance, however a range of optimum cash balance can be derived by using certain cash management tools. There are mainly two broad approaches i.e., mathematical/analytical tools and casli budget.

The methodology of both the methods is to determine the casli needs in an organisation for a given period and thereby assess the minimum cash balances for providing for adequate liquidity.'

There are many mathematical models, which are in use, however their detailed discussion is out of the scope of this course. We have already seen the cash budgets in detail in the previous section.

Liquidity ratios can be used as a tool for assessment of optimum cash balance and liquidity in the casli system. Drawing meaningful conclusions from the ratios, optimum levels of casli balances can be determined. These ratios are:

Current ratio : It is defined as Current assets/ Current liabilities This reflects the liquidity in the system, whether the current assets are sufficient to pay for the current liabilities. Generally it should be greater than 1, which means that in the normal course of business, the current assets are sufficient to meet the obligations towards payment of current liabilities. If the ratio is less than 1, it reflects other wise. As a thumb rule the ratio should be greater than 1. The higher the ratio, more safety is there to meet the current payment obligations, but at the same time it reflects the excess and idle cash in the system.

Acid test ratio : It is defined as (casli and casli equivalents + receivable) / Current liabilities. This reflects the ready liquidity in the system and availability of cash for meeting payment obligations.

Turnover ratios : There are primarily four turnover ratios which reflect upon the working capital situation in an organisation.

- i) **Inventory turnover ratio :** It is defined as $360/\text{Inventory held in no. of days}$. This signifies how frequently the inventory is converted into finished goods during a year. Higher the turnover the faster is the conversion into finished goods and better it is. This reflects the manufacturing efficiency of the organisation.
- ii) **Debtors turnover ratio :** It is defined as $360/\text{Receivable in no. of days}$. This signifies how frequently the cash is realised from the debtors during a year. Higher the turnover the faster is the conversion into finished goods and better it is. This reflects the manufacturing efficiency of the organisation.
- iii) **Creditors turnover ratio :** It is defined as $360/\text{Creditors payable in no. of days}$. This signifies how frequently payment is made to the creditors during a year. Lower the turnover the slower is the payment.
- iv) **Working capital turnover ratio :** It is defined as $360/\text{working capital in no of days}$. This signifies how frequently the working capital cycle is rotated during a year. Higher the turnover the faster is the rotation and better it is.

These turnover ratios in combination with current ratio and Acid test ratio, provide meaningful inputs for assessment of optimum cash balance.

17.6 INVESTMENT OF SURPLUS CASH IN MARKETABLE SECURITIES

You have learnt that the cash outflows and inflows are not synchronous and either have excess cash or there is deficit, which needs to be arranged for. In situations where the optimum cash balance has been determined, the balance of the liquid assets or surplus cash are invested in marketable securities. Such marketable securities are desired to have two basic characteristics namely:, they should be short term in nature and there should not be reduction in the principal amount of the investment over period of the investment.

In short only those securities which can be converted into cash in a short period of time say ranging from a day to few days, without reduction in principal amount can qualify for short term investments.

These securities should have ready market as it minimises the amount of time requires to convert a security into cash and vice versa. Also these securities should have safety of principal as otherwise the firm would be better of leaving the balances in cash if it were to risk a significant reduction in capital.

Like cash there are three motives for holding securities namely transaction motive, precautionary motive and speculative motive. Each motive is based on the premise that investment in marketable securities should attempt to earn a return on temporary idle funds.

An evaluation of the following criteria can provide insights for selection of proper marketable security.

Financial risk : This refers to the risk profile or credit rating of the security issuer. Lower the rating, higher the risk of default in principal and or interest payment.

Interest rate risk : The risk associated with the volatility in returns from a financial instrument attributable to changes in interest rates is known as interest rate risk. Proper analysis should be made for understanding and factoring it for selection of the right security.

Tax implications : Impact of relevant tax laws should be considered, as tax treatment is different for interest income and appreciation of security as capital gains. The tax impact should be property assessed in choosing the right security as it will vary from firm to firm.

Liquidity : It is very essential that the security should be liquid in nature and should have a ready market, only then it would be possible to convert the security into cash at a very short notice at or near the prevailing market price. Also the cost involved in conversion like brokerage etc should be factored.

Yield on security : As the four factors as mentioned above have a bearing on the yield on the security and a finance manger must analyse the risk return trade off and take decision accordingly.

Some of the more prominent and common marketable securities are:

Treasury Bills

T-Bills are issued by the Government and they are sold on a discount basis. The return on the investment is the difference between the purchase price and face (par) value of the bill.

The treasury bills are issued only in bearer form. A very active secondary market exists for these bills. The secondary market for bills not only makes them highly liquid but also allows purchase of bills with very short maturities. They are for all practical purposes, and risk free. As the financial risk is negligible and the liquidity is very high, their yield are lower than those on the other marketable securities. They are the most popular marketable securities even though the yield on them is lower.

Commercial Paper

They refer to short term unsecured promissory notes generally sold by large business firms to raise short term cash. Only those companies having sound credit ratings can issue. Commercial papers (CPs). These papers are generally sold on discount basis in bearer form. There is no active trading in secondary market for CPs, although direct sellers of CPs often repurchase it on request. We have discussed CP in detail in Unit 16.

Mutual Funds

Now days investment in mutual funds are very popular as they offer convenient alternative avenue for investing surplus short term money. There is a very active market for them and there are many schemes to choose from to suit the needs of the firm. For example there are liquid funds in which the surplus money can be invested for even a day and different schemes are available which offer different risk return profiles to suit investors. There are debt funds, equity funds, balanced funds etc depending upon the markets where the corpus of the funds are invested. All the mutual funds are regulated as per SEBI guidelines.

Inter Corporate Deposits

Yet another avenue for investing short term surpluses are inter corporate deposits, that is short-term deposits with other companies. It is a fairly attractive form of investment of short term funds in terms of rate of return. However, apart from the fact that one month's time is required to convert them into cash, inter corporate deposits suffer from high degree of risk.

Call Market

It deals with funds borrowed / lend overnight / one-day (call) money and notice money for periods up to 14 days. It enables firms to invest their surplus money gainfully. However, the returns are highly volatile as they are driven by the regulations related to the maintenance of cash reserve ratio (CRR) by banks.

17.7 ELECTRONIC BANKING

Information technology has changed the entire spectrum of banking and more and more corporate are now harnessing the advantages of this technical revolution. Electronic banking has made impact in almost all type of banking transactions be it transfer of funds, depositing cheques, making payments etc. Now a days one can execute transactions from one's computer and the physical interface between the company and the bank has reduced to a very large extent.

Electronic banking offers two main advantages namely lower cost of transactions and convenience. It has many dimensions like phone banking and internet banking. One important factor to be kept in mind regarding electronic banking is security considerations. Although banks have invested heavily in infrastructure and tried to make the transactions secure through encryption technology, password driven identifications, digitized signatures etc, still one should be careful in effecting funds transfers through electronic banking. For this full proof systems and proper security arrangements should be in place as otherwise it can be lead to serious frauds.

However if there are adequate and reliable safeguards in place, it can be used, as it is definitely cost effective and fast.

Check Your Progress B

- 1) What is inventory turnover ratio? What does higher ratio indicate?
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- 2) What is acid test ratio?
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- 3) What is Call Market?
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17.8 LET US SUM UP

Cash management is important for the survival of an organisation. The objectives of cash management are to ensure that the funds are available at the right time and at the lowest cost, idle cash must be minimised, and enhance cash generation, etc. The motives for holding cash are transaction motive, precautionary motive and speculative motive. To plan and control the use of cash, cash budget is an important tool. Cash strategies are linked to cash cycle of a firm. Cash cycle reflects the total time taken in the process by which the cash is used for making payments to suppliers for raw material and expenses which resulted in raw materials inventory. By reducing cash cycle, cash balances can be minimised. The basic strategies to effective cash management are speedy collection of accounts receivables, and stretching accounts payables.

Maintenance of optimum cash balance requires balancing of maintaining liquidity and minimum cash balance. Liquidity ratios can be used as a tool for assessment of optimum cash balance. Cash outflows and inflows are not synchronous. We may have excess cash or deficit. Excess cash can be invested in marketable securities. Electronic banking has made influence on banking transactions. It offers low cost of transaction and convenience. However adequate and reliable safeguards should be taken.

17.9 KEY WORDS

Cash Cycle	: Time taken between cash disbursement and cash collection.
Cheque Deposit Float	: Time taken in depositing the cheques.
Collection Float	: Time taken by banks in collecting payment from customers' bank.

Precautionary Motive : Cash held for meeting unexpected needs cash cycle.

Speculative Motive : Cash held for speculative purposes like taking cash, discount, bargain purchases.

Transaction Motive : Cash held for meeting day today needs.

Transit Float/Postal Float : Time taken for cheque to reach firm by post.

17.10 TERMINAL QUESTIONS/EXERCISES

- 1) Explain the motives for holding cash.
- 2) What is cash budget? How is it prepared?
- 3) What are the objectives of a firm in collecting its cash disbursement?
- 4) Why do some firms have long cash cycles?

UNIT 18 INVENTORY MANAGEMENT

Structure

- 18.0 Objectives
- 18.1 Introduction
- 18.2 Need for Holding Inventory
- 18.3 Objectives of Inventory Management
- 18.4 Cost of Holding Inventory
- 18.5 Inventory Management Teclniques
 - 18.5.1 Economic Order Quantity (EOQ)
 - 18.5.2 EOQ with Quantity Discount
 - 18.5.3 Re-order Level (ROL)
 - 18.5.4 Safety Stock Level
 - 18.5.5 Maximum Stock Level
- 18.6 Selective Inventory Control
 - 18.6.1 Always Best Control (ABC) Analysis
 - 18.6.2 Just-in-Time Inventoiy Control (JIT)
 - 18.6.3 Inventory Turnover Ratios
- 18.7 Let Us Sum Up
- 18.8 Key Words
- 18.9 Terminal Questions/Exercises

18.0 OBJECTIVES

After studying this unit, you should be able to:

- a explain the need for holding the inventories and cost-benefits associated with it;
- determine economic order quantity as a tool to control inventory maiiagement costs;
- o decide re-order level, where tlie risk of non-availability of inventory for production needs is minimum;.
- decide safety stocks and minimum stock levels to ensure continuous production;and
- describe tools of selective inventory controls such as ABC analysis applying the principles of the management by exception.

18.1 INTRODUCTION

Inventory, also known as stock, is anything which a firm has which is not currently being used by the firm. Factory may have stocks of raw material, work-in-progress, office may have stocks of stationery and warehouse may have stocks of finished goods. Inventory is important for the firm to function smoothly. Imagine